U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0696/S-96, REVISION 4

East Building, PHH-23
1200 New Jersey Avenue SE
Washington, D.C. 20590

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency[1] and United States of America[2] for the transport of radioactive materials.

1. Source Identification - QSA Global Inc. Model II Source Capsule.

2. Source Description - Cylindrical single over-encapsulation consisting of a capsule body, sealing plug, impact plug, snap ring, and cap made of stainless steel that provides a metal-to-metal seal when assembled. Approximate outer dimensions are 76.2 mm (3.0 in.) in diameter and 298.5 mm (11.75 in.) in length. Minimum wall thickness is 7.62 mm (0.3 in.). Final assembly shall be in accordance with attached AEA Technology QSA, Inc. Drawing No. R20047, Rev. B.

3. Radioactive Contents - The capsule described by this certificate is authorized to contain any one of the following single radionuclides, the sole pair of radionuclides, or either one of the two sets of six (6) radionuclides, in the chemical forms identified, and limited to the activities shown, in the table below. The radioactive material is limited to solid form in stainless steel capsules, between layers of non-radioactive stainless steel, or affixed to non-radioactive stainless steel by electroplating or other means. The maximum mass of the contents is limited to 2,500 grams.

Radionuclide(s)	Maximum Activity(ies)	Chemical/Physical Form
Americium-241	9.99 TBq (270.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Americium-241:Be	9.99 TBq (270.0 Ci)	Oxide mixed with beryllium powder pressed into a solid pellet or intermetallic
Americium-241:Be AND Cesium-137	Am-241 - 37.0 GBq (1.0 Ci) AND Cs-137 - 7.4 GBq (200.0 mCi)	Am-241 - Oxide mixed with beryllium powder pressed into a solid pellet or intermetallic. Cs-137 - Cesium in silicate glass matrix, sulfate pellet, compressed anhydrous chloride pellet or aluminosilicate ceramic pellet.
Californium-252	199.8 GBq (5.4 Ci)	Oxide or oxide in palladium metal to form a cermet

[1] "Regulations for the Safe Transport of Radioactive Materials, 1996 Edition (Revised)", No. TS-R-1 (ST-1, Revised), published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2] Title 49, Code of Federal Regulations, Parts 100 - 199, United States of America.

Radionuclide(s)	Maximum Activity(ies)	Chemical/Physical Form
Cesium-137	200.0 TBq (5,405.4 Ci)	Cesium in silicate glass matrix, sulfate pellet, compressed anhydrous chloride pellet or aluminosilicate ceramic pellet
Cobalt-60	40.0 TBq (1081.1 Ci)	Metal
Curium-244	3.7 TBq (100.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Iridium-192	37.0 TBq (1000.0 Ci)	Metal
Plutonium-238	9.99 TBq (270.0 Ci)	Oxide or oxide incorporated into a ceramic enamel
Plutonium-238:Be	9.99 TBq (270.0 Ci)	Oxide mixed with beryllium powder or intermetallic pressed into a solid pellet
Plutonium-239 AND Plutonium-238 AND Plutonium-240 AND Plutonium-241 AND Plutonium-242 AND Americium-241	Pu-239 - 3.7 TBq (100.0 Ci) AND Pu-238 - 9.99 TBq (270.0 Ci) AND Pu-240 - 9.99 TBq (270.0 Ci) AND Pu-241 - 40.0 TBq (1081.1 Ci) AND Pu-242 - 9.99 TBq (270.0 Ci) AND Am-241 - 9.99 TBq (270.0 Ci)	Oxide incorporated into a ceramic, refractory composite, metal foil or metal plated to substrate

Radionuclide(s)	Maximum Activity(ies)	Chemical/Physical Form
Plutonium-239:Be AND Plutonium-238 AND Plutonium-240 AND Plutonium-241 AND Plutonium-242 AND Americium-241	Pu-239 - 3.7 TBq (100.0 Ci) AND Pu-238 - 9.99 TBq (270.0 Ci) AND Pu-240 - 9.99 TBq (270.0 Ci) AND Pu-241 - 40.0 TBq (1081.1 Ci) AND Pu-242 - 9.99 TBq (270.0 Ci) AND Am-241 - 9.99 TBq (270.0 Ci)	Metal or oxide mixed with beryllium powder or intermetallic pressed into a solid pellet
Strontium-90	37.0 TBq (1000.0 Ci)	Strontium titanate, strontium fluoride, oxide in ceramic enamel or fluoride in aluminum metal matrix
Radium-226	370.0 GBq (10.0 Ci)	Sulphate or chloride

4. Special Conditions -

a. Capsule assembly shall be conducted in accordance with QSA Global Inc. H1070, Rev. 6, Assembly Procedure for the Model II Special Form Capsule.

b. Capsule components must be obtained from QSA Global Inc.

c. A copy of the applicable, completed Record Sheet required by QSA Global Inc. H1070, Rev. 6, Assembly Procedure for the Model II Capsule, shall be attached to this IAEA Certificate of Competent Authority in order to demonstrate the regulatory requirements for special form radioactive material have been met.

5. Quality Assurance -

a. Each assembler of the Model II Source Capsule shall register their identity, in writing, and provide evidence of a Quality Assurance program based on international or national standards to the Office of Hazardous Material Technology (PHH-23), Pipeline and Hazardous Materials Administration, U.S. Department of Transportation, Washington, D.C. 20590-0001.

b. Assembly of the Model II Source Capsule shall be performed under the Quality Assurance program registered with the U.S. DOT.

c. Records of Quality Assurance activities required by paragraph 310 of the IAEA regulations[1] shall be maintained and made available to the authorized officials for at least three years after the last shipment authorized by this certificate. Consignors and consignees in the United States exporting or importing shipments under this certificate shall satisfy the requirements of Subpart H of 10 CFR 71.

6. Expiration Date - This certificate expires on February 28, 2011.

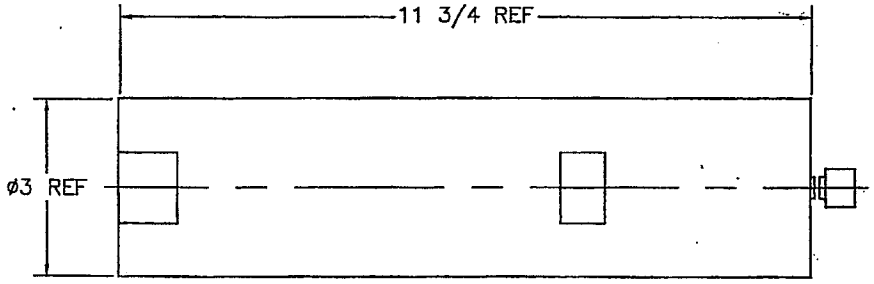
This certificate is issued in accordance with paragraph 804 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the petition and information dated December 4, 2008 submitted by QSA Global Inc., Burlington, MA, and in consideration of other information on file in this Office.

Certified by:

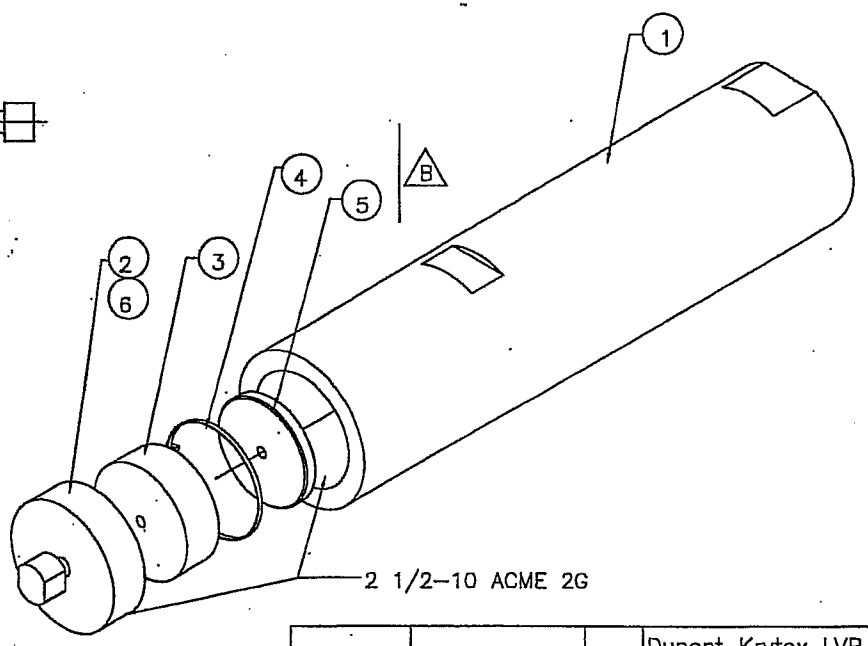
Bob Richard
for Deputy Associate Administrator for Hazardous Materials Safety

DEC 16 2008
(DATE)

Revision 4 - Issued to revise the authorized radioactive contents for Pu-239, including radioactive impurities, mass limit, and chemical/physical form.



CAPSULE AFTER ASSEMBLY
(KNOB SHEARED OFF)



NOTES:
1. CAP AND BODY THREAD DEPTH 3/4"

ITEM NO.	PART NAME	QTY.	DESCRIPTION
6	LUBRICANT	AR	Dupont Krytox LVP Fluorinated Grease .
5	IMPACT PLUG	1	ST.STEEL
4	SNAP RING	1	ST.STEEL
3	SEALING PLUG	1	ST.STEEL
2	CAP	1	ST.STEEL
1	BODY	1	ST.STEEL

APPROVALS	DATE
	2/10/05
	2/15/05

AEATECHNOLOGY QSA
40 NORTH AVE, BURLINGTON, MA 01803

DESCRIPTIVE DRAWING

UNLESS OTHERWISE SPECIFIED
1.ALL DIMENSIONS ARE IN INCHES
TOLERANCES:
FRACTIONS ± 1/8
X.X ± 0.12
X.XX ± 0.08
X.XXX ± 0.020

ERF#
991

TITLE: SPECIAL FORM CAPSULE MODEL II

SIZE	DWG. NO.	REV
B	R20047	B
	SCALE: NTS SHEET 1 OF 1	

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